



US Army Corps  
of Engineers®

Engineer Research and  
Development Center

# Flood-Fighting Structures Demonstration and Evaluation Program

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## Problem

For temporary, barrier-type flood-fighting structures, sandbags have traditionally been the product of choice in the United States. However, sandbag structures are labor intensive and time consuming to construct. Congress recognized the need for more expedient, cost-effective, temporary flood-fighting technologies and, in the 2004 Energy and Water Development Conference Report, directed the Corps of Engineers to act immediately to devise real-world testing procedures for the rapid deployment flood wall (RDFW) and other promising alternative flood-fighting technologies.

## Description of Research

ERDC, acting in response to the Congressional directive, developed a comprehensive [laboratory, field-testing, and demonstration program](#) for RDFW and two other selected flood-fighting products (Portadam® and HESCO Bastion Concertainer®). The two products were selected based on technical merit from proposals submitted by companies that manufacture temporary, barrier-type flood-fighting products. A standard sandbag structure was also tested in both the laboratory and field to provide a baseline by which the other products could be evaluated.

Demonstration and evaluation of innovative flood-fighting products are necessary because the flood-fighting community is reluctant to use these products during real-world flood events unless the products have been tested under representative conditions. The laboratory, field, and pilot testing conducted by ERDC will provide data on the technical soundness, operational functionality, and economic feasibility of these products under varying conditions.



Flood-fighting structures in field test (back to front): Portadam®, HESCO Bastion Concertainer®, sandbags, and RDFW)

Laboratory and field testing have been conducted, and pilot testing of the Portadam®, HESCO Bastion Concertainer®, and RDFW products is scheduled for completion during FY07. Testing will be conducted at two Corps District sites, to allow for product evaluation under conditions different than those experienced in the Vicksburg, MS, field testing. A total of 5,000 linear feet of each product was purchased for the pilot testing program. Approximately 1,670 linear feet of each product is being stored at four host Districts (Philadelphia, Rock Island, Omaha, and Sacramento) for use by all Corps Districts within the host District's geographic region during actual floods. The total of each product being stored is approximately 6,700 linear feet.

## Expected Products

As they become available, results from the product demonstrations are being posted to [the Program's publicly accessible Web site](#) to inform the flood-fighting community of available products and to assist them in selecting products best suited to specific flood-fighting needs.

## Potential Users

Potential users of these technologies and products are members of the Federal and non-Federal flood-fighting communities.

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**ERDC Participating  
Laboratories**

Geotechnical and Structures Laboratory (GSL), <http://gsl.erdc.usace.army.mil/gsl.html>  
Coastal and Hydraulics Laboratory (CHL), <http://chl.erdc.usace.army.mil/>